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Effect of Capsule Storage on Viability of Lactobacillus bulgaricus and Streptococcus thermophilus in Yogurt Powder

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Abstract : Yogurt capsule was made by mixing 14% w/v of reconstitution of skim milk with 2% FOS. The mixture was fermented by commercial yogurt starter comprising Lactobacillus bulgaricus and Streptococcus thermophilus. These yogurts were made as yogurt powder by freeze-dried. Yogurt powder was put into capsule then stored for 28 days at 4oc. 8ml of commercial yogurt was found to be the most suitable inoculum size in yogurt production. After freeze-dried, the viability of L. bulgaricus and S. thermophilus reduced from 109 to 107 cfu/g. The precence of sucrose cannot help to protect cell from ice crystal formation in freeze-dried process, high (20%) sucrose reduced L. bulgaricus and S. thermophilus growth during fermentation of yogurt. The addition of FOS had reduced slowly the viability of both L. bulgaricus and S. thermophilus similar to control (without FOS) during 28 days of capsule storage. The viable cell exhibited satisfactory viability level in capsule storage (6.7x106cfu/g) during 21 days at 4oC.

Keywords : yogurt capsule, Lactobacillus bulgaricus, Streptococcus thermophilus, freeze-drying, sucrose
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